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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,636	02/05/2004	Kunihiro Onoda	01-548	4115
23400	7590	01/17/2006	EXAMINER	
POSZ LAW GROUP, PLC 12040 SOUTH LAKES DRIVE SUITE 101 RESTON, VA 20191			TAMAI, KARL I	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

10/771,636

Applicant(s)

ONODA ET AL.

Examiner

Tamai I.E. Karl

Art Unit

2834

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/5/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of Group I, claim 1-9 in the reply filed on 7/26/2005 is acknowledged. Claims 10 and 11 are withdrawn from consideration.

***Specification***

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the movable structure synchronized with an intermittent laser beam by the potential difference movable side comb-tooth electrode and the fixed side comb-tooth irradiation period of the generated between the electrode must be shown or the feature canceled from the claim 7. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2834

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Behin et al. (Behin)(US 2001/0034938). Behin teaches a laminated electrostatic actuator in a bore having a silicon electrodes layers 202, 204 (or metal) separated by a silicon oxide layers 208, 210 mounted on a silicon substrate 206.

7. Claims 1 and 8 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Costello et al. (Costello)(US 6628856). Costello teaches a laminated electrostatic actuator in a bore having a silicon electrodes layers 602 separated by an insulating silicon dioxide layers and mounted on a silicon substrate (figures 19 and 20). The actuator can be used in conjunction with capacitor sensor plates (figure 17) for driving the actuator.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 2834

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behin et al. (Behin)(US 2001/0034938) or Costello et al. (Costello)(US 6628856), in further view of Li et al (Li)(US 6643053). Behin and Costello teach every aspect of the invention except the comb electrodes on the torsion spring and the actuator include three or more pairs of comb electrodes. Li teaches four sets of comb actuators mounted on the torsion springs to facilitate programming of the reflected light beam by the actuator. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Behin or Costello with the combs on the torsion beam of Li to facilitate control of the actuator mirror plate, as taught by Li.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Behin et al. (Behin)(US 2001/0034938) or Costello et al. (Costello)(US 6628856), in further view of Miller et al (Miller)(US 6000280). Behin and Costello teach every aspect of the invention except the comb electrodes being parallel to the torsion spring and extending half or more the length of the beam. Miller figure 11 shows the comb actuator 170 electrodes extending parallel to the beam and suggests from the figure that the electrodes are more than half the length of the beam 16 (from the anchor to the cross beams of the rotor arm 12). It would have been obvious to a person of ordinary skill in

Art Unit: 2834

the art at the time of the invention to construct the motor of Behin or Costello with the combs on the actuator of Miller provided enhanced control of moving plate.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Behin et al. (Behin)(US 2001/0034938) or Costello et al. (Costello)(US 6628856), in further view of Lee et al. (Lee)(US 5780948). Behin and Costello teach every aspect of the invention except the comb electrodes being different in the vertical direction. Lee teaches the comb electrodes being different lengths in the direction of movement. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Behin or Costello with the combs of different height because Lee to provide effective stiffness control in the actuator.

13. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Behin et al. (Behin)(US 2001/0034938) or Costello et al. (Costello)(US 6628856), in further view of Jain et al. (Jain)(US 6312134). Behin and Costello teach every aspect of the invention except the movable structure swung in synchronization with the intermitten radiation period of a laser and a laser beam directed at a distant object. Jain teaches an electrostatic micromirror with a controller 7 that synchronizes the mirror with the pulsed laser directed to a stage for a lithograph device. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Behin or Costello with the movable structure swung in synchronization with the

Art Unit: 2834

intermittent radiation period of a laser and directed at the stage to provide a controllable maskless lithography system, as taught by Jain.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272 - 2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (571) 273 - 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai  
PRIMARY PATENT EXAMINER  
January 12, 2006



KARL TAMAI  
PRIMARY EXAMINER